following variables were found helpful in separating those which passed from those which did not: (1) The effective steering direction at 700 mb.; (2) an estimate of the strength of the zonal current at 700 mb. west of Washington; and (3) an index of the availability of cold air in Canada. If the scatter diagrams (figs. 3 and 4) involving these variables are applied to cases of the specified type, it is believed that the results will provide a useful guide in forecasting cold frontal passages at Washington in summer 24 to 42 hours in advance.

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A TEST OF SCHMIDT'S METHOD OF FORECASTING THE PASSAGE OF SELECTED SOUTHWARD-MOVING COLD FRONTS

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In the foregoing study, Schmidt describes a method for forecasting the passage of selected cold fronts at Washington, D. C., during summer months. The summer months of 1945 and 1946 were set aside for test purposes, but due to the lack of a completely objective description of the type of situation described in the report, it was felt that such testing upon independent data should be left to someone other than the originator of the method.

The present writer, though perhaps not qualified to act as a completely independent judge of this technique since he helped select the cases in the original study, has undertaken such a test and suggests that others may wish to run the same experiment after reading Schmidt's paper and compare the results with those shown here. Altogether during the examination of all 0130 EST maps for June, July, and August of 1945 and 1946, seven cases were found which fit the definition of the type of situation to which this aid is applicable.

The following table lists the seven cases along with the data which are required for the test. The legend is the same as that shown above in Schmidt's table 1, except that column 5 contains the forecast and column 6 states whether or not an "effective" frontal passage occurred.

Though there may be some question as to the advisability of including case 6, it appears to be one in which a forecaster could logically attempt to apply the method. The question of a frontal passage at Washington must be considered in making the forecast and the decision to include it here is based largely upon the rapid eastward movement of a Low in the northern Great Lakes region. Such movement made it appear that future southward movements of the cold air would occur behind the Low as it moved *east* of the Lakes, and that the cold front would approach Washington from the north rather than from the northwest or west.

Test case No.	Date of 2200 EST 700-mb. chart	Independent variables				Dependent variable	
		1	2	3	4	Forecast 5	Observed 6
1	July 20, 1945	46.5	41.0	-------	-------	X	X
2	Aug. 17, 1945	36.0	38.0	−6	12	I	(*)
3	Aug. 28, 1945	45.0	45.0	-------	-------	X	X
4	June 6, 1946	46.0	43.0	−27	36	X	X
5	June 23, 1946	45.5	45.0	-------	-------	X	X
6	July 13, 1946	43.5	42.0	−24	28	P	P
7	Aug. 16, 1946	42.5	40.0	−11	9	P	P

* The front in question underwent frontolysis, so possibly the fact that an effective frontal passage was not forecast and none occurred justifies a statement that a correct forecast was made.

In general all of these forecasts are correct and therefore it appears that the method can be relied upon for use under the circumstances for which it is designed. However, these results are not intended to convey the impression that similar accuracy will be possible at all times, since one should expect an occasional error to occur due to unusual developments, etc., which have not occurred within the periods covered. Furthermore, one must point out the fact that there are some "back door" frontal passages at Washington for which the antecedent conditions differ from those specified by Schmidt. The method and the test are applicable under a particular set of conditions which, according to Schmidt, often precede by approximately one day the passage of southward-moving cold fronts at Washington, D. C.